# Exploring Information Gathering Process in Networked Environments

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- ## Information literate individual

library services and tools in the traditional sense

internet and information searching tools

One-dimensional → Multi-dimensional

Physical environment → Networked environment

a bulk of texts → hypertexts with links

- *Information searching /seeking /gathering*

correspond to searching

a combination of searching/seeking and collecting

# Information gathering process

Kellar, Watters, and Shepherd (2007)

- the process of collecting information from many sources and may take a day to several days,

- since there is not a single correct answer at the end of this process, students cannot decide when the process of information gathering ends.

- How information literate individuals collect information?

- how can we model their process?

## Research Design

- (qualitative )- case study

## Participants

- 3 people who are studying for graduate level education

| Participant | Age/ Sex | Department | Participation period |
| --- | --- | --- | --- |
| P1 | 25, M | CEIT | 10:45 - 11:45 |
| P2 | 23, F | CEIT | 15:38 - 16:20 |
| P3 | 23, F | ELL | 14:57 : 16:00 |

## Data collection and analysis

Participants were given a task of gathering information

- for preparing a presentation on

  "How developments in genetics will affect human life",

- And, we are requested to <u>think aloud</u> while performing the task.

- *The process limited to the internet sources.*
- *It has been considered of participants to be able to use computer and internet well.*

- Think aloud method is widely used while studying cognitive processes, such as problem solving, learning, decision making, human–computer interaction, and cognitive task analysis [7].

- While choosing the task to be searched, it has been ensured that participants did not have more prior knowledge about the topic chosen.
- Also, it is assumed that with low or non-existing prior knowledge, participants could be more reflective while thinking aloud in the process.

*Validity & Reliability*

To provide <u>construct validity</u> -more than one type of data (triangulation) was recorded in data collection process.

<u>Internal and External validity</u> - giving sample sentences from findings (internal) and with the analytical generalization to the studies in related literature (external).

To provide <u>reliability</u> the researchers have defined the all paces of the study clearly and saved all documents and data electronically.
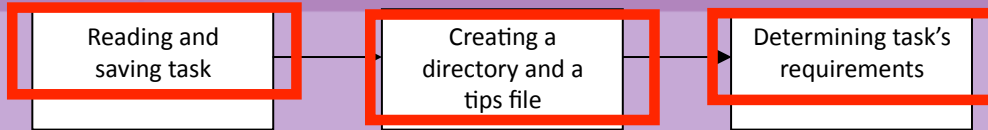
# Findings

We

- observed the performance of information literate individuals

- Then recorded and coded by using of think aloud protocols,

- and proposed a model for information gathering.

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| Reading and saving task | → | Creating a directory and a tips file | → | Determining task's requirements |
|---|---|---|---|---|

*P1: May I write the subject (title writing)*
*P3: Ok, I'm writing on a paper.*

*P3: I'm copying MS Word.) Then*

*P2: In fact I can wr new document from her presentation in*

*P3: But I want to c had to focus on it a again. And copying*

*P1: Hmmmm.. for exan "there are more (Opens menu of Explorer and run "Find") look*

*P1: If I'm going to prepare a presentation I look directly to the ppt sources. For example with the keywords of "genetics, how will affect human life". I'm designing the frame of topics, right?*
*P3: If I'll make a presentation I search more pictures and graphics. Now I'll search visual graphics by looking Google Images with keywords of genetics and human and then copy the pictures I've reached.*
*P3: hmmm, I intend to search from Google scholar before this. What kinds of books are there related to this issue and what kind of books I can get. I want to look at them and*

*P1: Normally, I have a break after searching and evaluate what kind of sources I've.*
*P2: Generally, I design a framework maybe in a word document. And I start to prepare the presentation at the end of my searches. When I totally searched and get everything I start to prepare my presentation. When I believe that was enough and got everything about that issue? If I get enough data to fill the titles and subtitles according to my framework, I can decide to finish.*

# Conclusion

- Information gathering as a process was modeled according to experienced researchers' points of view.

- The participants (who are also research assistants) from two different departments (CEIT & ELL) tend to reflect their **background** and different study strategies upon their information gathering process.

    *[Their schemata seemed to play a determinant role ]*

- For example, when "*reading and saving the task*", the two participants from CEIT recorded and saved the given task on their computers while the other participant from ELL preferred to write it down on a paper.

- Similar difference can be seen on "creating a directory and tips file" strategy.

- While two participants from CEIT *created a directory and saved the shortcuts of the web pages in it,*

- the other participant from ELL *created a word document and then copied and pasted the pages and images in it.*

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- P1 is the one who had the most effective and productive result in terms of the numbers of files, documents, links and keywords gathered.

- P1 has also the most efficient computer skills (for example, filtering strategy used only by him).

- These findings might indicate that "having effective computer skills" enabled this person to be more better on information gathering process in networked environments.

| Participant | Age/ Sex | Department | Participation period | Data size | The numbers of participants get/download about given issue | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Total links | ppt files | Documents (pdf, doc) | keywords |
| P1 | 25, M | CEIT | 10:45 - 11:45 | 326 line | 27 | 12 | 9 | 32 |
| P2 | 23, F | CEIT | 15:38 - 16:20 | 193 line | 6 | - | 3 | 18 |
| P3 | 23, F | ELL | 14:57 : 16:00 | 367 line | 6 | - | 3 | 9 |

- Another finding of this research indicated that participants preferred different search engines and changed the search engines according to their needs.

Apparently, knowledge about search engines and deciding on which one to choose become an important competency to be developed for novices.

- Youtube- for video search
- Google Image - to get visual materials (like photo, image...etc.).

# Suggestions

- This model can be applied to teaching information gathering process to novices
- Assessment forms can be designed to determine how individuals perform through the information gathering process
- Certain diagnostic tools can be developed to identify the problems and issues for each individual to pinpoint the pitfalls in information gathering process
- The effect of computer expertise in information-technology based search could be explored with more diverse participants in computer experience

Thanks..

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